



Turtle Mountain Replacement High School



Belcourt, North Dakota

Electrical Construction: \$2.2 Million

Year Completed: 2007

Project Manager: James Schmidt

Project Foreman: Ken Kjorsvik

Architect: KKE

General Contractor: Comstock
Construction Inc.

The Turtle Mountain Replacement High School is a 120,000 square foot facility designed to serve approximately 750 students at an estimated total project cost of \$21 Million. The school is also one of the first LEED (Leadership in Energy and Environmental Design) projects in the State of North Dakota.

The LEED designation offered unique lighting challenges. The lighting systems included daylight controls with a photo cell, occupancy sensors, several relays with their power packs, and a step dimming ballast for all classrooms and offices with windows in them. The system measures the amount of outdoors light and automatically dims the lights nearest the windows if ambient light is adequate. The occupancy sensors will shut down the entire lighting system in a room if it goes unoccupied for more than 5 minutes. The designs also called for up to five different types of light fixtures in one classroom.

The electrical system included a 2500 amp 480 volt service along with a 100 kilowatt generator to run emergency lights and all the critical systems.

The sound and communication systems in the facility were also quite extensive. The

communications had Fiber Optic backbones for the networking, Cat-5e for the data and phone locations and Cat-6e for the television distribution. There were nine classrooms and the library, each one wired for 18 to 24 computers.

The sound system included a general use speaker system, as well as separate stand alone sound systems in all 9 classrooms. The gym, cafeteria, and music room also had stand alone systems designed for performance.

Bergstrom Electric was awarded the project on March 29, 2006, and started work in October of 2006 with a crew of 6-8 employees. The manpower peak was reached in May of 2007 when 53 electricians were called to the site, over a weekend, to install 900 light fixtures in six days because of delayed shipment. Despite this enormous challenge, Bergstrom made their deadline with one day to spare.

Throughout the project there were numerous proposal requests and requests for information that resulted in 44 change orders totaling over \$450,000.

The project took 21,338 man-hours and was completed on October 13, 2007.

This project received the 2008 Minnesota Associated Builders and Contractors Pyramid Award for Electrical Construction.

